



A.D. 1842 N° 9572.

S P E C I F I C A T I O N

OF

ALONZO GRANDISON HULL.

ELECTRICAL APPARATUS FOR MEDICAL
PURPOSES.

L O N D O N :

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY :

PUBLISHED AT THE GREAT SEAL PATENT OFFICE,

25, SOUTHAMPTON BUILDINGS, HOLBORN.

Price 3d.

1856.



A.D. 1842 N° 9572.

Electrical Apparatus for Medical Purposes.

HULL'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, ALONZO GRANDISON HULL, of Clifford Street, in the County of Middlesex, Doctor of Medicine, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her
5 Royal Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Twenty-eighth day of December, in the sixth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Alonzo Grandison Hull, Her especial licence, full power, sole privilege and authority, that I, the said Alonzo Grandison Hull, my executors, admi-
10 nistrators, and assigns, and such others as I, the said Alonzo Grandison Hull, my executors, administrators, or assigns, should at any time agree with, and no others, from time to time and at all times during the term of years therein mentioned, should and lawfully might make, use, exercise, and vend, within England, Wales, the Town of Berwick, and in all Her Majesty's Colonies and
15 Plantations abroad, and in the Islands of Jersey, Guernsey, Aldernay, Sark, and Man, my Invention of "IMPROVEMENTS IN ELECTRICAL APPARATUS FOR MEDICAL PURPOSES, AND IN THE APPLICATION THEREOF TO THE SAME PURPOSES;" in which said Letters Patent is contained a proviso, obliging me, the said Alonzo Grandison Hull, by an instrument in writing under my hand and seal, particularly to
20 describe and ascertain the nature of my said Invention, and in what manner the same is to be performed, and to cause the same to be enrolled in Her Majesty's High Court of Chancery within six calendar months next and

Hull's Improvements in Electrical Apparatus for Medical Purposes.

immediately after the date of the said in part recited Letters Patent, as in and by the same, reference being thereunto had, will more fully and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said Alonzo Grandison Hull, do hereby declare that the nature of my said Inven- 5 tion, and the manner in which the same is to be performed, is particularly described and ascertained in and by the following description thereof (that is to say):—

My improvements in electrical apparatus for medical purposes, and in the application thereof to the same purposes, consists in certain modifications of 10 electrical apparatus, by which I am enabled to vary the size, proportion, and strength of parts of an electrical circuit, in order to produce certain results from the peculiar manner of applying the electric fluid to the cure of diseases and the improvement of health. By way of illustrating the nature of my Invention, I would premise that the formation of any mineral, vegetable, or 15 animal body mostly occurs under a particular electrical condition, and the destruction of any such mineral, vegetable, or animal body occurs under a different electrical condition. Knowing this, I have discovered that to form or dissolve bodies either in a positive or negative state of electricity requires an electrical circuit, the conducting parts of which are possessed of different 20 conducting powers, and the circuit so arranged as to put the part on which the formation or destruction is to take place in a positive or negative state of electricity, as the case may require. I would also observe, that it requires a certain quantity and intensity of electricity compared with the material or solution from which the body is to be formed, or with the material in which 25 the body is to be dissolved. It is easy to explain most of the phenomena of vegetable and animal life by the laws of electricity, the form of trees, the form, texture, and functions of the organs of animals. It is known or believed that the animal functions are in a great measure carried on by electrical forces, and I find that the modifications of electrical forces artificially applied may be made 30 conducive to the cure of diseases and the improvement of health. It is by varying the conducting powers of different parts of the electrical circuit that I obtain a certain quantity and intensity or quality of electrical force acting through the animal body, and so arranging the electrical circuit as to put particular parts of the animal body forming part of the circuit in a positive or 35 negative state of electricity, that I produce the beneficial results required.

Having explained some of the principles whereon my Invention depends, I proceed to shew the manner, in which I purpose to carry them into effect.

First, by making a difference in the size of the positive and negative poles

Hull's Improvements in Electrical Apparatus for Medical Purposes.

of the circuit. Second, by causing water, or other fluid, or medicines, or other media to be the communicating medium between either one or both of the poles and the animal body. Third, by making the extent of one surface of the water or other fluid, medicine, or other media in contact with the animal body
5 vary from the extent of the surface of water, &c. in contact with the body and in connexion with the other pole. Fourth, varying the quantity or the conducting power of the water or other media in contact with either pole. Fifth, placing the poles in such situations that the part of the body desired to be put in a positive state of electricity shall be nearest to the positive pole, and the
10 part desired to be in a negative state nearest to the negative pole. Sixth, modifying the action, by placing the poles at greater or less distances from each other when applied. Seventh, by dividing either of the terminal conductors and causing the connexion of the circuit to consist of a small quantity of water or other fluid in order to modify the action.

15 In adapting a galvanic battery or other electrical apparatus, I make the negative conductor of larger dimensions than the positive conductor, or vice versâ, which is the first feature of improvement or modification of my electrical apparatus. Secondly, the introduction of a vessel of water or other fluid, through which I pass the electric current, for the
20 purpose of ascertaining and modifying its intensity when the action of the battery is too strong. Thirdly, in making medicines a part of the electric circuit between the poles and the animal body, for the purpose of modifying the intensity of the electricity and introducing the medicine into the body, and also increasing and determining its effects. Fourth, in placing
25 the medicine in contact with the animal body, and so applying both poles to the medicine that the electrical circuit may pass principally through it for the purpose of acting upon the surface of the body. Fifth, in constructing a tube having two insulated wires passed through it for conducting the electricity, which tube is to be introduced into the bladder for the purpose of dissolving
30 stone. The form of such tube may be like the ordinary catheter, having its end open for the conducting wires to pass through, and the wires may be coated with a non-conducting material, except at their extremities. These wires being connected to the opposite ends of an electrical battery, will conduct the electric fluid through the wires, and by its action cause the stone to be
35 dissolved. Sixth, introducing similar insulated conducting wires into elastic tubes to be inserted into the body, for the purpose of conducting the electric fluid into or through any part of the body, as, for instance, into the stomach, to promote digestion and other purposes.

Having now described my improvements in electrical apparatus, and the

Hull's Improvements in Electrical Apparatus for Medical Purposes.

application thereof to medical purposes, I lastly desire it to be understood that the particular features of novelty which I claim under the above in part recited Letters Patent are:—First making the opposite poles of the electrical circuit of different sizes for the purpose of regulating the quantity, intensity, or quality of the electrical force; second, the introduction of medicine into the 5 electrical circuit; third, insulated conducting wires for passing the electric current into particular parts of the body; fourth, putting particular parts of the body into a positive or negative state of electricity, in order to stimulate or dissolve or to form it anew; fifth, varying the extents of the conducting surfaces, and quantity of water or other fluid or kind of fluid, or medicine, for 10 the purpose of modifying the electric current; sixth, introducing medicine into the body by means of immersion or partial immersion in a bath acted upon by an electrical apparatus.

In witness whereof, I, the said Alonzo Grandison Hull, have hereunto set my hand and seal, this Twenty-eighth day of June, in the year 15 of our Lord One thousand eight hundred and forty-three.

(L.S.) ALONZO G. HULL.

G. ROSE.

AND BE IT REMEMBERED, that on the same Twenty-eighth day of June, in the year above mentioned, the aforesaid Alonzo Grandison Hull came before our Lady the Queen in Her Chancery, and acknowledged the Specification 20 aforesaid, and all and every thing therein contained, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute in that case made and provided.

Inrolled the same Twenty-eighth day of June, in the year above written.

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1856.